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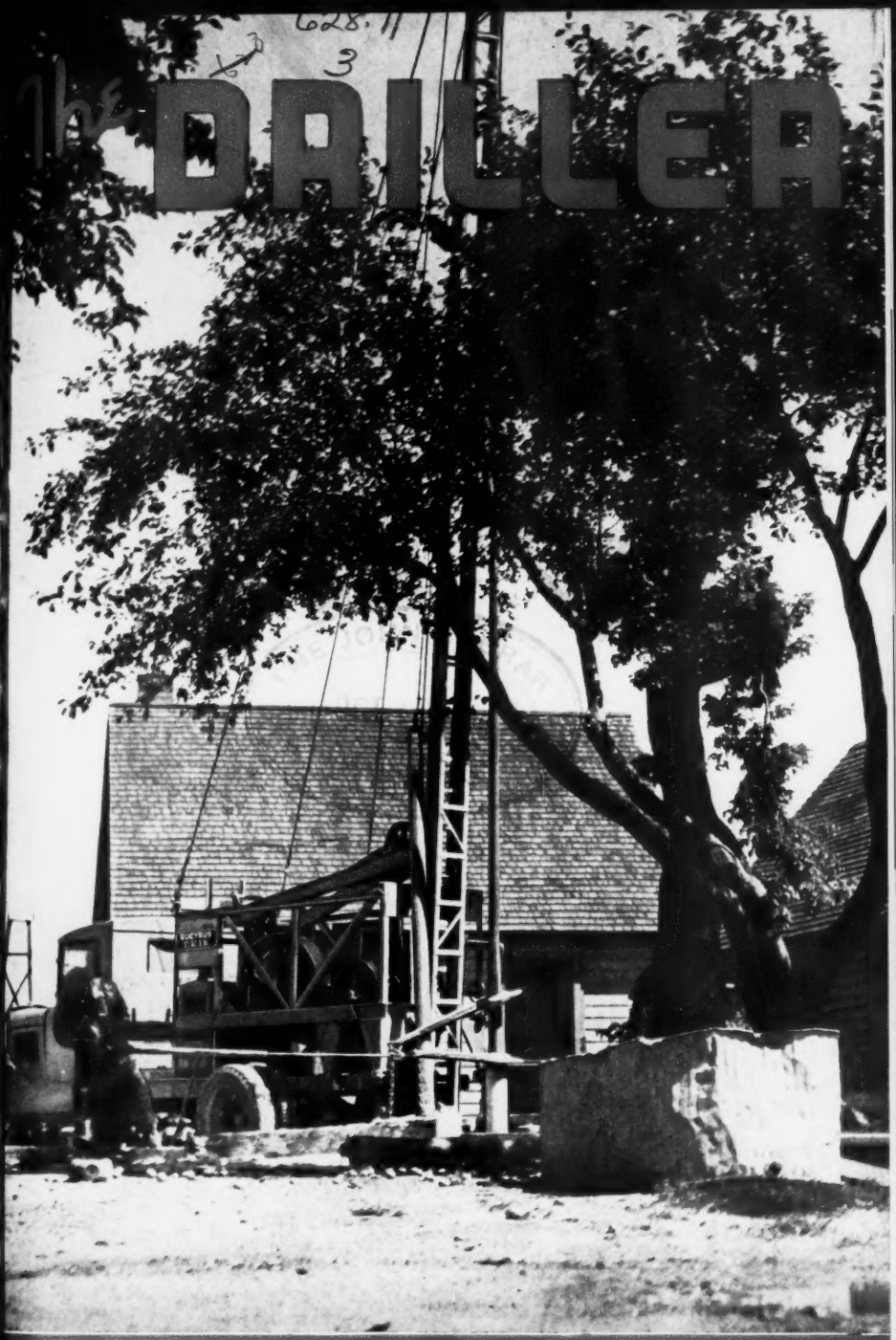
DRILLER



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VOLUME 18 OCTOBER, 1944 NUMBER 10

PLAN FOR POSTWAR

with BUCYRUS-ERIES

22-W

Handles 1500 lbs. of tools. Drills to 1000 feet.

Ask any drilling contractor who really knows the industry and he'll tell you: "There's going to be a drilling boom after the war . . . . . lifting of wartime restrictions, dropping water levels, air conditioning . . . . these and other factors are going to keep us busier than ever."

Chances are, he'll also tell you that **he's** planning to make the most of postwar business by including new Bucyrus-Erie drills in his equipment roster. He knows that they make hole fast, that their strong, all-steel construction keeps maintenance low, that they're his best bet for drilling profits.

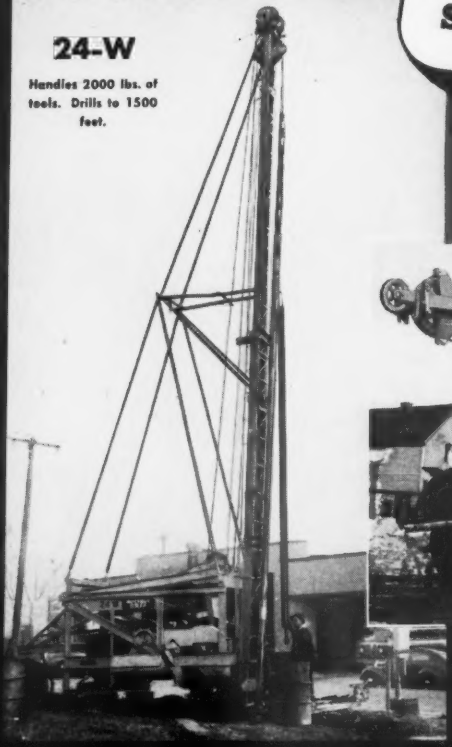
You can insure **your** postwar profits by taking a tip from him and planning to make your drills Bucyrus-Eries. The best way to do that is to save NOW so that you can buy THEN. And you'll help Uncle Sam to quicker Victory while your saving, if you

SAVE WITH WAR BONDS

J-84 C

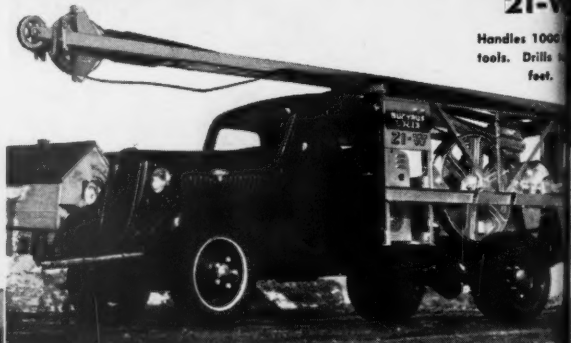
24-W

Handles 2000 lbs. of tools. Drills to 1500 feet.



21-W

Handles 1000 tools. Drills feet.



BUCYRUS-ERIE CO

South Milwaukee, Wis., Englewood, N.

Evansville, Ind.

Tennessee River Pipe-Line Job

Any kind of drilling in any part of the United States comes pretty close to describing accurately the work of the C. S. Wise, Jr., Drilling Co. of St. Louis.

ACCUSTOMED to unusual drilling work, the S. J. Wise, Jr., Drilling Co. of St. Louis last spring contracted for and finished a job that ranks among the most unusual in the field—drilling holes for a pipe line ditch across the Tennessee River near Perryville, Tenn. The job was completed in June after several months' work.

Because the pipe line required about 10 feet of coverage in the river bed, as much as possible of the ditching was done with a suction dredge supplied by another contractor.

But conditions didn't always per-

(1) C. S. Wise's two drill barges in position for operations on the Tennessee River last spring. A Bucyrus-Erie 21-W and a Bucyrus-Erie 24-W are mounted on the large barge. The smaller craft carries a Star 71.

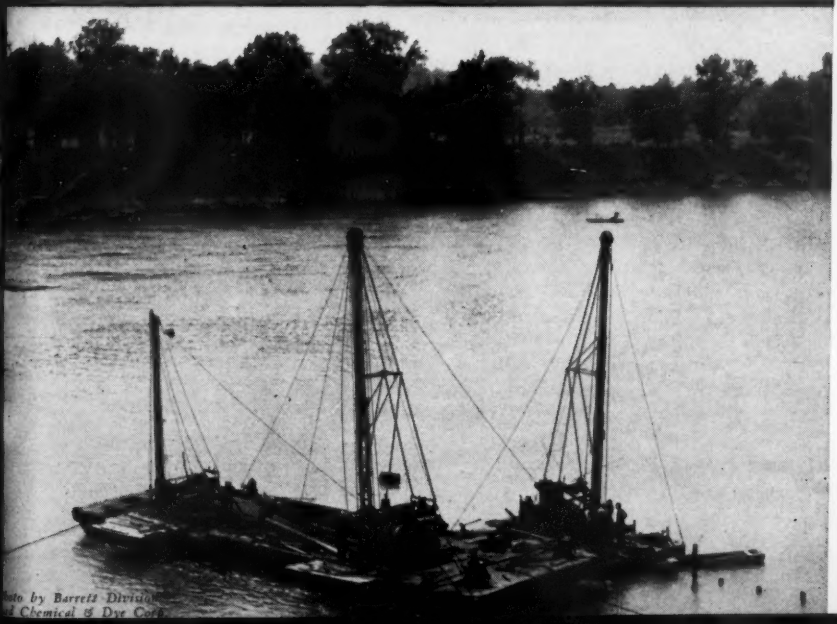


Photo by Barrett Division, Allied Chemical & Dye Corp.

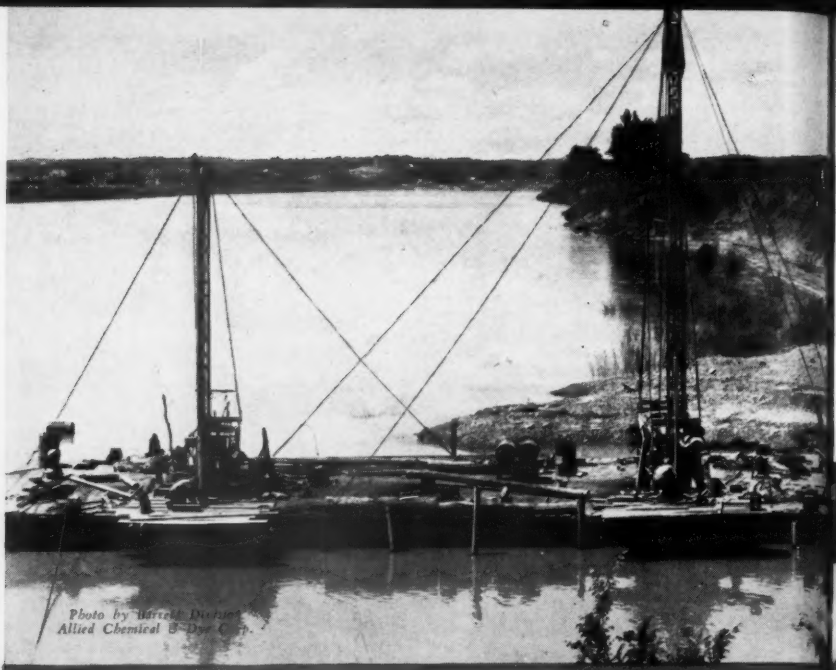


Photo by Barrett Dichter, Allied Chemical & Dye Corp.

(2) Working close to shore, the Bucyrus-Eries prepare holes for blasting the pipe-line trench.

mit use of the dredge. When sand and gravel overlying the limestone beds under the river were inadequate to permit proper coverage, the rock had to be drilled and blasted. That's when the Wise Co.'s water well rigs —a Bucyrus-Erie 21-W, a Bucyrus-Erie 24-W, and a Star 71—went to work drilling hole.

To facilitate drilling of the six-inch holes, the two Bucyrus-Eries were mounted on a single large barge while the Star was set up individually on a smaller one. Preparatory to drilling, the barges were moved into position and anchored. The fact that the required spacing of the holes was only five feet permitted the Bucyrus-Eries to put down hole simultaneously from one barge while the Star worked on a third.

Eight-inch casing was used in all holes to shut off the sand and gravel, six-inch casing placed inside the eight, and then the hole was drilled to proper depth usually 35 feet. After completion of the hole, the eight inch casing was pulled, leaving the six-inch extending above the water so explosives could be placed later.

Only on rare occasions was difficulty encountered in shutting off sand and gravel with the eight-inch casing, although much care had to be taken to get the casing placed straight whenever a new hole was started. This task was complicated by the fact that it had to be done in an average of 23 feet of rather swiftly moving water. By lowering the tool string to the bottom first and then lowering the casing, however, it was found that the casing could be set straight without undue difficulty.

Extreme high water in March and April were a real bugbear to prog-

ress, but by the end of the latter month the water had receded so that the drill barges could again be spotted on the line and drilling resumed in spite of the fact that the water still covered casing for holes drilled previously.

Casing for one of the holes was bent over during high water—apparently when hit by a heavy piece of drift—and as a result a nearly grave mishap occurred. When the water had receded below the tops of the casing on other holes, this one because of its being bent over was still not visible.

As coincidence would have it, one of the drill barges was directly over the bent casing when rapid recession of the water occurred, with the result that the casing pierced the bottom of the barge.

The craft's natural reaction was to begin sinking—which it proceeded to begin doing. Only frantic placing of sand bags around the hole and all-out commandeering and use of every pump in sight managed to keep the barge affoat long enough to permit tugs to pull it off the casing. With the help of a tow tractor, the barge was beached and proper repairs were made.

Breakdowns weren't frequent but a few of them—and occasional fishing jobs—occurred. Lost time was reduced to a minimum because of the fact that mechanics and welders were available at all times during the 24-hour day that the rigs worked. On one occasion when tools were lost in the hole, a suitable fishing tool was manufactured on the spot and in less than an hour after the tool was completed, the string had been fished out.

Unusual work for water well drillers, this kind of drilling, but the

(3) While the Wise Company's machines were busy drilling the river bottom, four other machines owned by other contractors put down holes ashore.

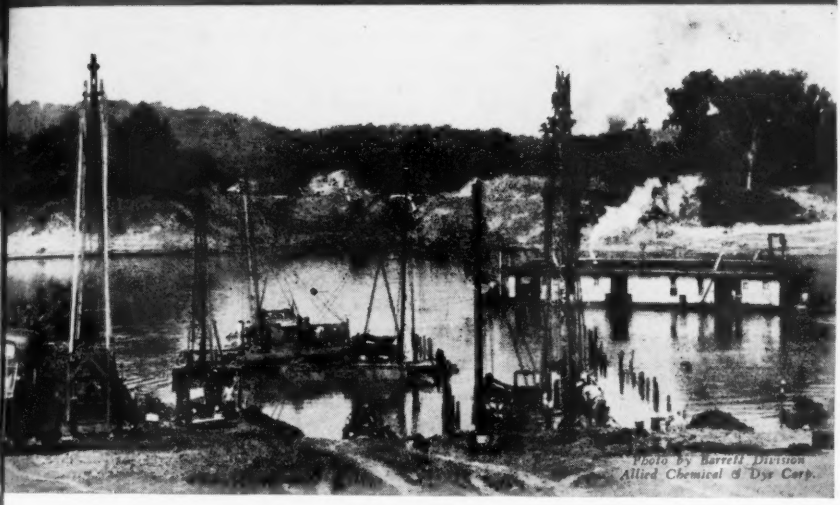


Photo by Barrett Division Allied Chemical & Dye Corp.

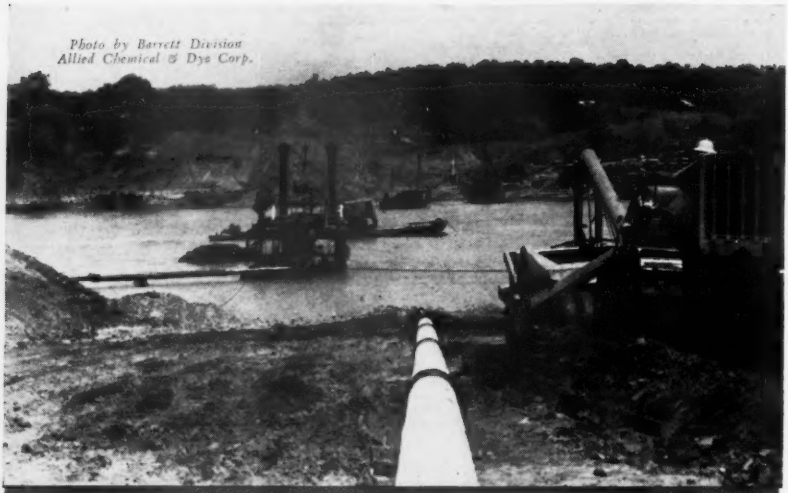


Photo by Barrett Division
Allied Chemical & Dye Corp.

(4) In addition to the barge-mounted drills which are visible on the far side, a four-wheel scraper, a dredge, and a clamshell were on the job when this shot was taken.

straight fact of the matter is that much of the Wise Drilling Co.'s work at present is on jobs other than water wells. Mineral prospecting and blast hole drilling comprise the larger percentage of this work at present. C. S. Wise, Jr., president and owner, points to curtailment of pumps as the reason why suburban and farm water wells have been de-emphasized on their drilling program during war time. He expects this type of work to show an increase this year, however, because of the greater allocations of farm pumps being made by manufacturers.

(5) The spectacle of simultaneous exploding of the charges in all of the holes drilled was breath-taking.

As to territory, "We're not adverse to going any place in the United States," Wise comments, pointing out that his company's operations have taken their machines into six states thus far — Indiana, Illinois, Kentucky, Arkansas, Missouri, and Tennessee. With a policy like that, there was of course no hesitation when it came to going to Tennessee for the pipe line job. That's why, too, it shouldn't be surprising for you to see the Wise rigs anywhere in the country—on any kind of work that involves putting holes into the ground.

Chapman Drills for Seabees

A DRILLER in civilian life, Lt. R. E. Chapman (C.E.C.), U.S.N.R., was president of the firm bearing his name in Oakdale, Massachusetts. Now it's "Lieutenant Chapman," but he's still doing well work—for the Navy Seabees somewhere in the South Pacific. Here are some of Lt. Chapman's experiences as related in letters to his wife, Marion I. Chapman, who is treasurer of the well company.

Lt. Chapman — Bob — finds well drilling for the Seabees just a bit different from the kind he was used to as a civilian, but as usual, he's getting the job done:

. . . "I even dug a couple of wells today—with a drag line. Our supply is very inadequate, so that should help. My dug wells are only about 8 or 10 feet deep, down on hard coral rock, and will have to be blasted to get any deeper. How I wish I had a well drilling rig here! Still, we might get salt water.

. . . "My two 'wells' are giving enough water to take care of the camp, so everyone had showers tonight for the first time in several days. We are dynamiting the wells deeper and might get more water. The coral is so soft that I guess you could drill more than 100 feet per day with a drilling machine.

. . . "If it happens to be raining too hard in the morning, we use the rain water running off the tent for washing, toothbrushing, and shaving. It is much better than the muddy water from our two 'wells' which are still just big open holes. I plan to make a new well with a very good supply by using a D-8 Caterpillar Bulldozer and digging a trench about 50 feet long and 10 to 12 feet deep. It will probably yield about 50 g.p.m. as you get numerous small streams through the coral and with a long enough 'well' they will count up. We dig the wells about 100 feet from the shore. (The temperature of the ocean is 86, the air was 86 in the late afternoon, and the shower water was 84.)

. . . "We are now running short of water and everyone is starting to yell for more. It is a wonder they have gotten along so far with two wells not over 10 or 11 feet deep. Every Seabee *must* have his shower once a day.

. . . "I am 'gravel packing' our ten-foot dug well. We get about 30 g.p.m. from the one we dug. We have an 8-foot square cribbing, with spaces between the planks near the bottom, and we are packing screened coral around the outside. It will be a fairly respectable well when we get through, although the coral is not much like the gravel at home."

Pump Supplies Sprinkler System

PUMPING water from the Columbia River to operate a battery of Rainbow sprinklers for irrigating 20 acres of alfalfa during the dry summer months is the job of a deep well turbine pump on a cattle and dairy ranch in Oregon.

Delivering its capacity at about 50 pounds pressure with the river at its lowest stage, the turbine has

(Continued on page 20)

The DRILLER

A JOURNAL FOR WATER WELL DRILLERS

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Vol. 16 October, 1944 No. 10

Report Shows Drought Spread

THE general drought which earlier in the year had resulted in subnormal stream flow and lowered ground water levels throughout the Atlantic coastal States spread westward to embrace all States as far west as Louisiana, Arkansas, Mississippi, Tennessee, Kentucky, and Indiana, according to the Water Resources Review for July, released by the Geological Survey, United States Department of the Interior.

"The dominant features of the month were the marked decreases in stream flow in the East and in the Columbia River Basin" the Review states. "The area of deficient stream flow in the central East noted during May and June was extended to embrace all or major parts of eleven States (400,000 square miles) ranging from Louisiana to northern New Jersey, but centering in Tennessee, Kentucky and Ohio, where the July runoff at 6 representative stations was the lowest of record for July. The runoff at 2 representative stations in Maryland and northern New Jersey was also the lowest of record for July."

"The drought had more effect on agriculture than on water supplies which are supported by deeper ground reserves. Storage reservoirs are ample, and except locally, there have been only a few water shortages. Recent rains have given welcome relief, especially in coastal North Carolina, where the stream flow rose from the lowest June of record to normal for July. In view of the subnormal discharge at the end of July, further rain deficiencies this summer might create a serious condition this fall when stream flow generally is at a minimum for the year."

In contrast to these pictures of droughts in the East and in parts of the western States, "Stream flow averaged four times normal for July in a broad area extending northward from Kansas to North Dakota; the runoff was the maximum for July at 3 representative stations in Nebraska and Iowa. The excessive runoff is due as much to the carryover effects of the above normal stream-flow in this area last month (when there were record-breaking floods in Iowa and Nebraska), as to normal or above-normal rains during July."

There were also local areas of above-normal stream-flow in southern California; this was, however, a reflection of the cool summer and the delayed melting of the snow on the mountains, rather than from any unusual summer precipitation.

Deming Turbines can take it!

● The Deming Deep Well Turbine Pump illustrated is not only doing an odd job but doing it without protection from extremes of weather in a northern state.

Installed 8 years ago, this pump handles salt water that is run to waste in order to develop a supply of valuable gas suitable for various uses in the owner's plant.

Note the receiver at the left of the pump. When the water in the well is drawn down, the gas is released for storage and use.

In addition to their dependability under extreme conditions, Deming Turbine Pumps are easy to install and service.

If you are not familiar with the complete line of Deming Deep Well Turbine Pumps, illustrated information will be sent to you upon request.

DEMING
THE COMPLETE LINE
PUMPS AND WATER SYSTEMS
The Deming Company · Salem, Ohio

NEWS OF THE MONTH

Great Northern New Distributor For Bucyrus-Erie

GREAT Northern Tool and Supply Company, Billings, Montana, has been appointed distributor for Bucyrus-Erie water well drills, drilling and fishing tools according to a recent announcement by Bucyrus-Erie Company.

The territory in which Great Northern Tool and Supply Company will handle the popular Bucyrus-Erie 21-W, 22-W, and 24-L drills will cover Wyoming and all of Montana except the northwest corner of the state. Service to the territory will be maintained through the company's main office at Billings and through its branches at Cut Bank and Kevin, Montana and Casper, Wyoming.

Well known for their policy of supporting sales with outstanding service, Great Northern Tool and Supply Company will be glad to assist Bucyrus-Erie customers and prospects with their drilling equipment problems.

Papers Available On Pump Subjects

HYDRAULIC INSTITUTE, the national trade association of pump manufacturers, announces the publication of a group of engineering papers on subjects pertaining to pumps, under the title "Engineering Papers — Fourth Annual Contest."

This publication is the outgrowth of Hydraulic Institute's contests held annually, to encourage the employees of its members to contribute something of value to the industry in theory, design, or practical application of pumps.

The subjects covered in the "Engineering Papers — Fourth Annual Contest"—are:

Section 1—Special Operating Conditions of Centrifugal Pumps.

Section 2—A Common Language for Hydraulic Engineers.

Section 3—Critical Speed.

Section 4 — Direct Acting Steam Pumps "Suggestions to Make Present Pumping Equipment Meet Wartime Production Requirements."

Section 5—Effect of Entrained or Dissolved Gas on Rotary Pump Performance.

Copies of this publication may be secured from Hydraulic Institute, 90 West Street, New York 6, N. Y., for $1.50 per copy plus postage.

Water Systems Group Meets

THAT dealers will find it profitable to make water systems their major line in the postwar years was the consensus expressed by the Postwar Planning Committee of the electric farm pump and water system industry at a meeting in Chicago on August 1 and 2.

The goal of the water system industry as set up by the committee is the sale of 500,000 electric farm pumps and water systems in the first year after Victory.

To aid the industry in achieving this goal, the Postwar Planning

Committee, through its various subcommittees, is carrying on an extensive program. Subcommittees include materials, markets, engineering and production, publicity, personnel, and export.

The reports of the chairmen of these committees as presented to the over-all Planning Committee at the Chicago meeting constitute an action program for postwar preparation. It was pointed out at the meeting that the industry will make more rapid progress if the postwar program of the manufacturers is paralleled by an equally comprehensive program by distributors and dealers.

"Now is the time for dealers to prepare for postwar system sales," says the committee in a statement issued in connection with the meeting.

"This is the time for the dealer to decide which line of pumps and water systems he will handle after the war. The dealer should start now to work with his manufacturer and his distributor in getting ready for postwar sales."

Pomona Pump Sale Announced

FAIRBANKS, MORSE & CO., has purchased the Pomona Pump Company, a division of Joshua Hendy Iron Works in a $4,000,000 transaction.

Announcements of the sale were made simultaneously in Chicago by R. H. Morse, Jr., general sales manager of Fairbanks-Morse, and in Sunnyvale, California by Charles E. Moore, president of the Joshua Hendy Company. The sale was effective as of September 2.

All physical assets, patents and trade-marks of the Pomona and Westco pump lines were included in the transaction. The Pomona firm has plants in Pomona, California and St. Louis, and has been doing approximately 7 to 8 million dollars worth of business annually. With acquisition of this line, Fairbanks-Morse becomes the world's largest manufacturer of turbine pumps.

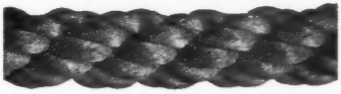
Announce New Water System

A NEW FARM and home water system, the convertible "H" Series Myers EJECTO, has been designed by The F. E. Myers and Bro. Co., of Ashland, Ohio according to a recent announcement. Increased efficiency, resulting in greater water pumping capacity and lower maintenance costs is claimed for the new water systems by the manufacturer.

The new water system is built in

(Continued on page 20)

FITLER
COMMANDO BRAND
SISAL DRILLING CABLE



for use in water well and blast hole drilling is especially constructed to give it plenty of spring and is lubricated against internal friction.

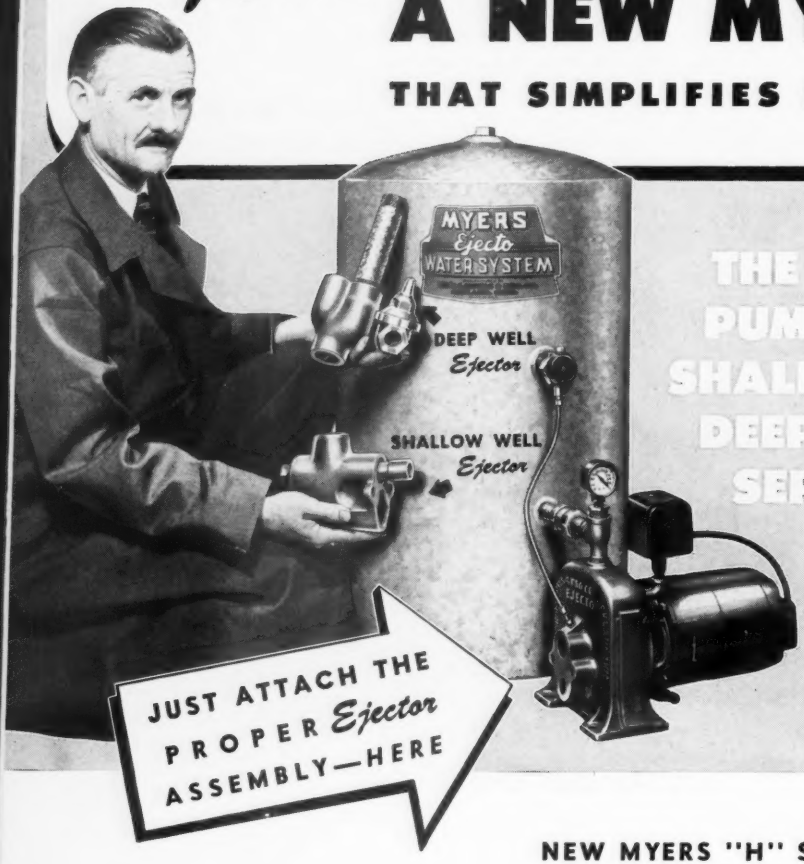
If your dealer cannot supply you—write direct for information.

THE EDWIN H. FITLER CO.
Established 1804
5625 Tacony Street
PHILADELPHIA 24, PA.

Announcing

A NEW MYER

THAT SIMPLIFIES SELLIN



THE SAM
PUMP FO
SHALLOW
DEEP WEL
SERVICE

Eithe
can
pate
many

This new Myers "H" series Ejecto brings sweeping changes to the retail water system business, from selling to servicing, from ordering to stock handling.

Here is new designing — a simple, patented convertible feature — modern packaging — convenience of stocking — new performance, reliability and low cost — many unusual features that make water system retailing simpler and more profitable.

This new "H" series Ejecto measures up to everything we have promised Myers dealers — and more. Look at the big advantages — going far beyond any other water system yet produced. It's tomorrow's water system, today — another triumph for Myers leadership.

NOTE: Under Wartime Restrictions and present maximum production capacity it is Myers policy to confine current production to Myers dealers and distributors only.

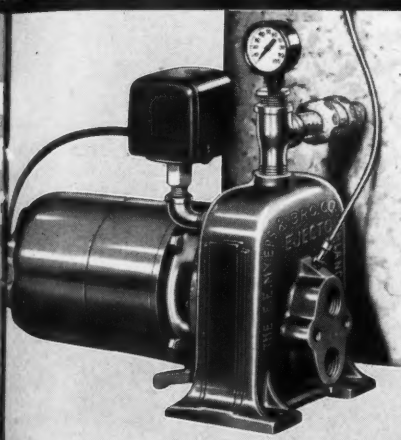
NEW MYERS "H" SERIES GIVES

1. **CONVERTIBILITY.** Patented new conv packin feature enables Myers dealers to meet any inexpe condition with much smaller stock and inves grade vibrati
2. **EASIER TO INSTALL.** Offset installation charge pipe can be connected from any EASIE tion. Packaged units convenient for quick ass includi ing pu
3. **EASIER TO START.** No repriming. Pump be rem handle gas or air in water without br dischar suction.
4. **LESS SERVICE REQUIRED.** No stuffing b POSITI leak or cause overloading of motor by to tank a positiv

THE F. E. MYERS & BRO. COMPAN

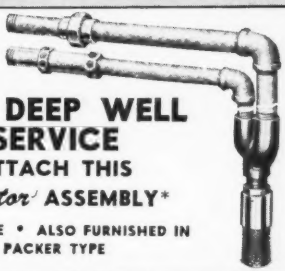
ERWATER SYSTEM . .

LLINSTALLING, SERVICING, STOCKING



Either the shallow or deep well assembly can be attached to the pump. This is the patented, new convertible feature with many advantages for Myers dealers.

FOR SHALLOW WELL SERVICE
ATTACH THIS
Ejector ASSEMBLY



FOR DEEP WELL SERVICE
ATTACH THIS
Ejector ASSEMBLY*
*TWIN TYPE • ALSO FURNISHED IN PACKER TYPE

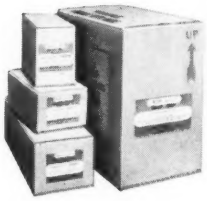
ES & VES YOU ALL THESE ADVANTAGES

v conv packing. Instead, a rotary seal ring, durable, neet any inexpensive to replace. Motor design and high nd inves grade construction permit cooler running, less vibration, longer life with minimum attention.

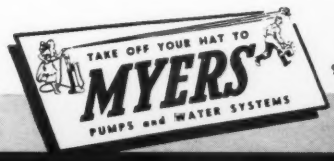
allation. m any EASIER TO SERVICE. Complete rotating unit, uick asse including motor, can be removed without disturbing pump case or pipe lines. Ejector and pipe can g. Pum be removed from well without disturbing pump or out bre discharge connection.

POSITIVE AIR CONTROL. Air is supplied to uffing b tank as needed. Correct amount of air assured— by to positively no water-logging.

PACKAGED!
EASIER TO STOCK AND HANDLE



Pump and motor — shallow well assembly — deep well assemblies — all are packaged and identified by catalog numbers. More convenient; permits neat, orderly stocking. Fewer pump and motor units required for complete stock to meet all conditions.



91WS4

FROM THE MAILBAG

This page is open to any of our readers having questions to ask relating to drilling, driving pipe, dressing bits, etc. All letters will be answered promptly by experienced drillers and engineers who are qualified to give intelligent advice on these subjects. We will publish as many letters of general interest as space will permit. Address: The Driller, South Milwaukee, Wis.

Sirs:

Our customer had a 31-foot dug well that was in solid rock. There was about two feet of water in the well. We installed 6-inch pipe, drilled and seated the pipe in the rock to a point where the water from the dug well could not run in.

We hit a water stratum at 65 feet. The water came within 24 feet of the surface and stood higher in the drilled well than it was in the dug well. We made bailer tests, bailing about 10 gallons per minute and could not lower the water. This was on Friday afternoon. We drilled Saturday morning to a depth of 74 feet and on Monday to 81 feet.

We then bailed until the water was clear. The head was still standing at 24 feet. The drilling was stopped and the machine moved.

Tuesday afternoon we checked the water head and it had lowered to 54 feet. We put in the pump on Wednesday. The water was very muddy, pulled down to 71 feet, and will not come back up at all. The well is not filled up and there is water still standing in the dug well.

L. L. M. North Carolina.

(The following answer appears through the courtesy of a drilling contractor whose extensive knowledge of underground formations qualifies him as an authority. He has requested that his name be withheld.)

This stratum is evidently an uncertain water bearing formation or the water would have remained at its original static head. The following is a possible explanation: The rock could consist of a number of layers, containing non-porous layers which control the water heads. The rock in the 31-foot dug well has a static head of 29 feet, and the rock at 65 feet has a head of 24 feet. The rock stratum from 70 to 81 feet probably does not bear water and is apparently of a silty and clay-like rock, or rock that has in it seams filled with silt or clay. The water of a static head of 24 feet probably has sufficient pressure to force out of the crevices the silt or clay which prevented the water from entering the stratum. Then, with the silt or clay forced out, the stratum (at 70-80 feet) absorbs the water from the strata above, which explains the lowering of the water head.

It could be, of course, that the usual static water head is at 71 feet. In our own area, a few cases have occurred in which water from the St. Genevieve stratum was of a higher static head than that of the St. Louis stratum — both belonging to the Mississippian formation. This was due to local feeding of waters into the St. Genevieve, bringing it to a higher level than usual. However, when the St. Louis was tapped, the water head dropped to the usual static head of the St. Louis.

All of this, of course, is only one man's version of what might have occurred and might not be correct at all. Additional information on the well might suggest a different idea altogether.

Sirs:

We have just received 200 lbs. of Aquagel for use on a job which has given us the most trouble we have ever had.

The pipe we are using is 4-inch I.D. At

(Continued on page 21)

In Line for Victory

COOK Well Strainers hold back sand and let in water from sand and gravel strata at camps, air fields, proving grounds, munition plants, ordnance works and war defense factories.

★

Fig. 50

COOK Brass Tube Strainer
Nominal Sizes:
2 to 12 in.
Slots: .004 to .125 in.
Durable
Efficient
Easily installed
Self-cleaning V slot

A standard for 60 years

Fig. 75LP

Fig. 75LP

COOK WW Strainer
In Red Brass, Silicon Bronze or Iron
Nominal sizes: 5⅝ to 40 in.
Slots: .010 to .187 in.
Sturdy
Large inlet area
Self-Cleaning V slot
For PLAIN and GRAVEL-WALL wells

GENUINE COOK WELL SUPPLIES

A. D. COOK, Inc.
-Outfitters for Wells-
LAWRENCEBURG INDIANA

DEEP-WELL COOK PUMPS

Make Contracts Definite

LAWYERS are commonly blamed for the production of wordy contracts. Often has the writer been told by a client "I want something short and simple." There is much to be said in favor of making any agreement as short and simple as is consistent with the stating of all the essential terms of a contract. But lawsuits are a greater expense than ink and paper.

An error on the side of length and definiteness of a contract is less apt to breed litigation than is an error the other way.

One point is well illustrated by reference to two cases decided by courts of western states.

In *Littrell v. Wilcox*, 27 Pac. 394, the contractor and landowner agreed in a series of conversations that the former was to dig a well for the latter. After he had proceeded to dig to a depth of 230 feet at a well site selected by the landowner, the contractor was told to discontinue work, though no water was found. The contractor, not having specified the price at which he worked, brought suit for the reasonable value of his services, and the landowner claimed he owed the driller nothing because there could be no recovery until the latter had produced a well—that is, a hole containing more than surface water. The jury, on conflicting testimony held for the driller, and the defendant took the case to the Montana Supreme Court on the question. If a man agrees simply to dig a well, does he imply that he will produce water?

The court held that he did not, saying:

"It cannot be seriously contended that it appears from the evidence that the plaintiffs ever agreed in terms to sink to water. But defendant found his argument upon his construction of the word 'well'; that plaintiffs agreed to drill a 'well'; — and that, if they did not produce a hole in the ground containing water other than surface water, they did not drill a 'well', and cannot recover. Let it be observed here that nothing was said about price when the work was commenced and the contract made. *The defendant himself selected the site for the proposed well.*

* * * All that can be gleaned from conversations of the parties is that plaintiffs were to dig a well. From the contract, and the circumstances, to construe an undertaking on the part of the plaintiffs to reach water or receive no pay seems to us to do great violence to language, and to the ordinary transactions of sane men. * * * When plaintiffs went to dig a well, when they took a site selected by defendants, when no guaranty of reaching water was made, when no price was fixed for performing the services or reaching water, can a court for a moment regard it as within the contemplation of the parties, as shown by their words or their acts, that they used the word 'well' as meaning hole in the ground containing water other than surface water? We think not. Bouvier's Law Dictionary defines a 'well' as a 'hole dug in the ground in order to obtain water.' This is to our mind the only practical view. The object of a well is to obtain

water. The well may be unsuccessful."

It is far from clear that the law on this point is settled. There is little reported evidence on which it can be said with confidence that courts outside of Montana would follow the *Wilcox* case. Certainly, even in Montana the case should afford no ground for a contractor omitting to put in a contract langauge from which any court can definitely say either "This man agreed to bring in a producing well" or "this man agreed to drill to a depth of ..... feet unless a satisfactory flow was developed at a lesser depth."

To illustrate the fact that the contractor can derive no sense of security from the *Littrell* case, see *West v. McDonald,* 67 Ore. 551, Pac. 650, holding that the plaintiff contractor agreeing "to drill a well" impliedly warranted that he would produce an adequate supply of wholesome water. Plaintiff appealed from a judgment determining that he had agreed to reach water and denying him recovery because no water was reached and the Oregon Supreme court stated: "If the plaintiff was not responsible for the results of the excavation, it can be said properly that a well meant nothing more than a mere hole in the ground. * * * The trial court left to the jury the question of determining what the parties meant by digging a well. This presented plaintiff's theory of the case. On the other hand, the court said * * * that, 'in using the word '"well"' in these instructions, I mean a hole sunk or drilled into the earth *to such a depth as to reach a supply of water.*' This is a *permissible* definition of the term. 'A well consists of a pit sunk in the earth

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WIT BITS

Two old settlers, confirmed bachelors, sat in the backwoods. The conversation drifted from politics to cooking.

"I got one o' them cookery books once, but I never could do nothing with it," said one.

"You've hit it. Every one of them recipes began in the same way—'Take a clean dish.' And that settled me."

Little Willie lit a rocket
Which his Pa had in his pocket.
Next day he told Cousin Dan,
"Papa is a traveling man."

Some noisy relatives were visiting a couple and happened to mention their dog, a big mongrel.

"He's just like one of the family," said the pup's proud mistress.

"Which one?" asked the hostess.

"Did you lose a dollar?" asked the small boy.

"Why, yes, I believe I did," exclaimed the stranger. "Did you find one?"

"Oh, no, I just want to find out how many have been lost today. Yours makes 55."

A salesman had joined the Army, gone into action, been wounded. For several days he lay delirious, but eventually he turned the corner. On the first day of his recovery he was surprised to see all the nurses standing 'round his bed, offering him money.

"What's this for?" he asked.

"Why, for the radios and refrigerators you sold us while you were unconscious."

Cross-eyed Judge (to first prisoner): "What have you to say?"

Second Prisoner: "I didn't do anything."

Judge: "I was not talking to you."

Third Prisoner: "I didn't say anything."

Doctor: "This is a very sad case, very sad. I much regret to tell you that your wife's mind is gone—completely gone."

Mr. Peck: "I'm not at all surprised, doctor. She's been giving me a piece of it every day for fifteen years."

Accompanied by a driver, an American major in a motor truck was challenged by the sentry at a cross road. "Who goes there?"

"One American major, one ton of fertilizer and one buck private." They were allowed to proceed but at every cross road they went through the same ritual. After a while the driver asked if they were likely to be stopped again.

"I think so," replied the major.

"Well, Major," said the private, "the next time we're stopped, would you mind giving me priority over the fertilizer?"

Rastus (throwing down four aces): "Dar, guess I wins dis ole pot, all right."

Sambo (angrily): "You play dis game honest, big boy, play it honest. I knows what cards I dealt you!"

"Is Uncle Pete a liar?"

"Well, when feeding time comes he has to get somebody else to call the hogs."

Contracts . . .

(Continued from page 17)

until a water-bearing stratum of the earth is reached, from which water therein will flow into the pit, and a flow of water be thus obtained.' Andrews v. Carman, 1 Fed. Cas. No. 371, p. 888."

However, the Supreme Court decided that, read as a whole, the trial judge's instructions to the jury were to the effect: "If you find that the contract *contemplated a finished well yielding an adequate supply of water*, and that the compensation should not, in any event, exceed a specified sum, the plaintiff cannot recover until he has performed his contract and produced such a well."

Thus it becomes clear that where the well contractor "fell down" was in omitting to see to it that his contract was so *worded* as specifically to show that his right to pay was not contingent upon bringing in a producing well unless he was willing to "gamble" on finding water to the extent of guaranteeing that he would drill a *producing* well.

The Supreme Court reversed judgment in favor of defendant, the landowner, and ordered a new trial of the case on the ground that the trial judge erred in indicating to the jury that plaintiff was an "expert well driller," and that he had "abandoned" the job without securing a sufficient supply of water.

The moral of comparing the divergent holdings of the two courts is not to emphasize the unpredictability of litigation; it is, rather, to emphasize the advantages of the contractor's knowing what obligation he is willing to undertake, and expressing that obligation in language that neither party can dispute.

—A. L. H. Street

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Water System . . .

(Continued from page 11)

four sizes. Shallow well capacities range from a maximum of 520 gph for the ¼ H.P. unit to 2,200 gph for the one H.P. system. Capacities of the deep well systems are equal to the manufacturer's present models.

Design of the new "H" Series Ejecto permits use of the same pump and tank assembly for both shallow and deep well installation, the manufacturer asserts. Parts for making these changes are boxed separately and properly labeled.

Sprinkler . . .

(Continued from page 7)

been on the job for five years and is still "going strong".

Spencer Machinery Company of Portland, Oregon, made the installation. The recommendation was based chiefly on the ability of the pump, a Deming Deep Well Turbine, to operate from high to low water stages without losing prime and without making any change in the piping or pump location. This was a decided advantage in view of the fact that the water level in the river fluctuates at least twenty feet during the season.

The turbine was installed on piling driven into the sandy bottom of the river about 60 feet off shore. The pump column and bowls, or stages, are about 35 feet overall, reaching to within about a foot of the river bottom. A screen elbow was fastened to the bottom of the column with the elbow pointing down stream to avoid sand which might otherwise enter the pump during freshets and high water.

The water pumped is used only for operating the Rainbow sprinkler system. Domestic water supply is obtained from a drilled well.

Mailbag . . .

(Continued from page 11)

20 feet we ran into heaving quicksand, which has persisted down to 236 feet, at which point we have difficulty in making the pipe go down at all. Moreover, we have never been able to get closer with our tools than 45 feet from the bottom of the pipe due to heaving, especially in the last 125 feet. This locale is supposed to have rock at 120 feet, which makes this well more unusual than ever. We feel that if we can clean out the pipe to the bottom, we might be able to finish this job, with the aid of Aquagel.

Can you tell us how to handle the Aquagel as to consistency in mixing and what procedure we should follow in cleaning out the pipe and in getting the pipe to drive?

A. A. Mich.

When using the Aquagel we suggest you follow about the same procedure as Mr. Watson outlined in his article which appeared in the June issue of THE DRILLER, that is mix the Aquagel with water to a light consistency so that it will pour freely into the hole on the top of the packed sand and at the same time pack some of the Aquagel of a heavier mixture into the water channels of the bit before running the tools. If you do this you should be able to drill out the plug although it may take a while to get started, that is until the Aquagel and packed sand get mixed freely so that the tools will penetrate it and permit the sludge to be bailed out.

After you have the plug drilled out the Aquagel should hold the walls of the hole to permit drilling below the pipe and you should then be able to drive the pipe more freely. It may go slow at first but after you get started you will probably be able to drive the pipe down to the desired depth. Care must be taken, of course, not to drive the collars over the thread in the top coupling which can easily happen in hard driving.

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BARGAIN COUNTER

To the reader who wishes to advertise used equipment in "Bargain Counter Section.

All advertising in this section is payable in advance. Enclose your check or money order with copy. Rate: 10c per line. Minimum charge $1.20. No discounts; no commissions. Read these instructions carefully. The average line contains 28 characters (20 characters if all capital letters are used). Count spaces and punctuation as one character each. Allow 10 characters for box number if blind advertisement is desired. Count your own copy to save delay. Holding up your advertisement one month to secure approval of revised copy or an additional remittance, may cost you real money in a lost sale. Be sure to enclose the correct amount of money with your order. Closing date—10th of preceding month. Example—January issue closes December 10th.

To the reader wishing to answer "Bargain Counter" Section advertisements appearing on these pages:

Be sure to address your inquiry to the advertiser by using the correct box number. Mail your letter in care of THE DRILLER, South Milwaukee, Wisconsin. Write each advertiser a separate letter. Do not write us for name and address of advertiser. This information will not be given out. We have no information about the equipment advertised other than that shown in the advertisements themselves.

DRILLS

One No. 4 Loomis on solid tired White truck $975.00. One No. 1½ Loomis on International truck, pneumatic tires, $950.00; Tools extra. H. J. Burkhart, Box No. 175, Bellevue, Ohio.

Armstrong drilling machine No. 14, mounted on rubber tired trailer. Powered with 8 h.p. Cushman motor. 500 ft. drill line and sand line. Complete string of Armstrong tools with swivel socket, bits 4" to 8", all in good condition. Box 3610

32 Star mounted drilling machine. Mounted on a 1927 Reo truck; both in A-1 condition; located in eastern Connecticut. Box 0389

Sparta well drilling rig, wood frame, in very good condition. Equipped with shock absorber for wire line use. Mounted on trailer. Machine is located in Wisconsin. Box 3410

OHIO — Model 38 Star Super Tractor Drilling Machine, 1000′ capacity. Gas-gasoline engine. Complete with or without tools. Box 0438

MISC.

Rotary Table and Mud Pump and 2 roller bearing swivels with water connections. Will turn casing or drill pipe. Lloyd Fredebaugh, Novelty, Ohio.

WANTED

Wanted to purchase or lease drilling machine for drilling 1000′ starting 24" diameter and finishing 12" diameter, in Virginia. Bucyrus-Erie 36-L or machine of equivalent size. Reply — Box 3510, c/o THE DRILLER.

Steel drill machine, preferably 24-W, with or without tools, and truck.

F. N. Hagmann, Jr.
Vienna, Va.

WANTED TO BUY—One Bucyrus-Erie 21-W Drill, truck mounted, with or without tools. State condition and price. Box 0417

Announce New Tool Holder

A NEW adjustable tool holder with a vise grip for use in lathes, shapers, and planers is announced by the Robert H. Clark Company of Beverly Hills, California. The exclusive Clark principle of adjustability makes possible the use of any of four or more sizes of tool bits in the same holder instead of requiring a separate holder for each size thus saving the mechanic's time by enabling him to change bit sizes without changing holders. Models available are the 15° sloping cutter channel type and the horizontal or parallel channel type in both right and left hand offset. Each type is available in several shank sizes.

Cover . . .

A 250-foot, six-inch well had just been completed at Cudahy, Wisconsin, when this picture was taken last summer. The contractor was L. L. May of Cudahy; the operator was Abel Refsnes.

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